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MONTHLY REPORT

1 AUGUST - 31 AUGUST 1963

ENGINEERING SERVICES BRANCH ENGINEERING STAFF

RADIO EQUIPMENT & SYSTEMS SECTION

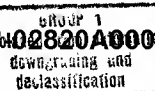
1. With the advent of several new engineers, numerous small projects which have been hanging fire were completed. Various types of marine transceivers and aircraft VHF, UHF and HF equipments were cataloged.
2. Information relative to the Strategic Reserve stock pile was collected preparatory to making recommendations for the modernization of these systems.
3. A Communication system planning guide based on DCA circuit and system block diagrams with additional OC system block diagrams was prepared. This pamphlet will aid in selection of equipment and preparing bills of material for new facilities.
4. Extensive liaison with R&D and external contractors covering components of the Medium Speed Receiving Positions was accomplished during the period.
5. Specifications were drafted for a new Standard HF Receiver. We plan to submit them to OL/PD and request proposals from qualified contractors.

AREA ENGINEERING SECTION

1.

a) Most of August was spent in the determining of technical specifications and writing procurement memos for the project. This included some \$90,000 worth of 1-5/8" coaxial cable, three each 335 KW generators and control panels at \$80,000, and four coaxial patch panels at \$34,000. It is expected that all these will actually be placed under procurement early in September. Preliminary site drawings were received and reviewed, with final drawings and CB liaison planned for September.

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b) Procurement approval and details were sent to [] in answer to a dispatch outlining a proposed T-Site antenna field revision, in line with prior discussions for this purpose at [] in June 1963.

c) Tentative determination of equipment to be used for a four-channel SSB MUX system at [] was made in coordination with [] components. Final choice will be made in concert with [] personnel in the field; decision lies between Northern and Telesignal equipments, the ability of [] for operation and maintenance, and whether [] will procure the items.

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d) Action is underway to modify for automatic start/transfer one of the 100 KW generators to be installed at the [] T-Site.

e) Discussions are also underway with AFD and Army components on the establishment of a four channel SSB link outlet between []. This will involve additional receive antennas and installation of rotatable LP antennas, at least in the interim, at the T-Site, pending the outcome of negotiations to obtain additional T-Site real estate. This land is also highly desirable for antennas to four upcoming field stations plus the base station in the [].

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2. []

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[] - Work is progressing on the [] Base Station project with a few modifications on equipment location and circuit requirements. The following work was accomplished.

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a) Removal of the receiving and teletype equipment from the proposed transceiver site and their relocation in the [] Building.

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b) An expansion of our present area in the [] to include the new equipment; a tentative floor plan of the arrangement has been submitted.

c) The total amount of receiver and teletype gear was reduced by approximately a third from the first proposal for a more realistic answer to the station's circuit requirements.

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3. []

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a) [] EXPANSION

(1) Work on transmitter station layout is awaiting a decision as to type(s) of transmitting equipment(s) to be used.

(2) Drawings for Receiver Site TTY patch racks have been completed. Receiver site equipment layout drawings have been submitted to the [] engineer for approval.

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b) [] departed this month for an extended TDY in Europe.

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c) [] drawings were dispatched to []

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d) New installation drawings were dispatched to []

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e) Plans for new installations at [] were worked on and coordinated with the []

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f) A preliminary study of the possibility of 24 on-line circuits being accommodated in the existing [] facilities was initiated.

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g) One week was spent at [] with a [] representative repairing the 208U-10's.

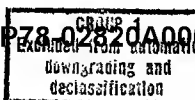
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WIRE ENGINEERING SECTION

1. Character Sequence Recognizer - Specifications were completed and sent to the Procurement Division, OL. No bids have yet been received for the fabrication of this equipment.

2. R-20-A Low Level Keyers - Two prototypes with the latest "fixes" have been received and are presently being radiation tested by the OC-SP Lab.

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3. Patch Panel - The 12-line rack mounted patch panel is now due in the second week of September. The design of a 6-circuit patch panel with TD clutch wiring has also been delayed approximately one month.

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4. Scanner - This unit continues to give considerable trouble. The "down" time exceeds the "up" time. A high speed page printer made by to be utilized in conjunction with the Scanner, is expected next month.

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5. KW-26 Output Filter and Keyers -

A. Two NSA filters were installed and operationally tested. Distortion was less than 5% and the units operated normally. The modification consists of unsoldering a 20 pair cable from the terminal box on the rear of the transmitter and receiver case, removing the terminal boxes, installing the NSA filters and resoldering the 20 pair cables. Prior to installing the NSA filters, the paint had to be removed from the area between the KW-26 case and the filter case to ensure a good R.F. bond. This turned out to be quite a tedious operation. The total time involved to complete the modification of one terminal unit was at least six hours.

B. A photo-diode keyer fabricated by the OC-SP Lab was tested for a period of several days on a KW-26 transmitter. Distortion on this unit was found to be too high (13%) for operational use and it was returned to OC-SP for redesign.

C. An adaptor ring was fabricated by WES to accommodate an R-20-A low level solid state keyer for the output of a KW-26 transmitter. After a filter was removed (one wire unsoldered and taped) from the output circuit of the transmitter, this keyer worked with less than 2% distortion on the transmit line. Modifications to adapt the R-20-A keyer to the KW-26 transmitter are extremely simple. The input current to the keyer is 70 micro amps.

D. Items mentioned in A and C are presently being tested for radiation by the OC-SP Lab.

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6. D.C. Power Supply - A prototype is being made by the [] and is to be delivered to this shop for evaluation by the end of September. This power supply will supply 60 volts D.C. with a maximum capacity of 5 amperes and is intended for use as a teletype loop current power supply.

7. Versitron Power Supply 500 MA - The Versitron 500 MA power supply is due in for evaluation in September.

8. Multiple Tape Reproducing Unit - Fabrication of this unit is near completion. There is a hold up at present due to slow delivery of the special switches ordered for the 14 copy configuration.

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9. Relay Panel - The fifty relay panels presently being fabricated by [] for the R-10 and Sigma 72 relays are due in the middle of September.

10. The prototype solid state output driver package for the Northern Tone Converters fabricated by [] has been received. It is presently being tested at [] 25X1A5A1 25X1A6A

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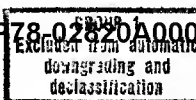
11. Full Time Signal Line Distortion Monitors - The [] has twice submitted their prototypes of this unit and have twice been rejected. Variance in the percentage of distortion between the mark and space conditions has been the basic reason for the rejections. [] is to 25X1A5A1 resubmit their prototypes for evaluation by 7 September at 25X1A5A1 which time their contract becomes invalid. [] is to supply their rack shelf containing one Line Distortion Monitor by the first week in September.

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12. Power and Signal Line Filters - Filters manufactured by [] have been declared standard and placed on order for the [] signal center. Standard installation procedures and drawings have been completed and pouched to [] 25X1A

13. The expansion of the Langley signal center is approximately 65% complete.

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14. Teletype Selcal - One modification kit has been received and installed on a KSR. The kit is designed for use with the field station roll-around and operates as follows: The roll-around printer (KSR) is left on standby during the hours that an operator is not on duty. Upon receipt of that field station's call sign, an alarm is sounded at the [] guard's desk. He pushes a button also located at his desk which automatically energizes a 20 character answer back "fox" which contains the field station call sign. This "fox" continues until the operator summoned by the [] guard arrives to deactivate the system.

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15. Test Equipment - [], delivered three new proprietary items for our test and evaluation. One unit is called a [] Analysis System which is the equivalent to the []. It is capable of transmitting and/or analyzing teletype signals with or without various percentages of distortion. Another unit is an 80 character programable message generator for speeds of 60-75 and 100 words per minute. The third unit is a portable two character generator for speeds of 60 and 100 words per minute. Several suggestions have been given to and accepted by the manufacturer to be incorporated in future models. After one trouble with a heat sensitive transistor in the Teledata set, these units have performed satisfactorily.

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16. Quick Disconnect Clamps for 6 Circuit Teletype Cabinets - A prototype of a quick disconnect clamp has been received and is being tested by the maintenance personnel at Langley. This clamp takes the place of three screws which normally clamp the 6 circuit reperforators to their base. Time saved in eliminating these hard to reach screws as well as the safety factor will be of great benefit to the maintenance personnel.

17. KW-26 Normal Input Keyer Problems - Another concentrated effort has been initiated to attempt to locate and eliminate this problem. At present rhodium plated contacts are under 24 hour test. Rhodium has much the same properties as gold but is a much harder metal. Another "fix" that is under the same test is a spring washer added to the contact operating linkage which has greatly reduced the problem of contact bounce that ultimately appears as a "spike" when looking at the signal with a scope. Results of these tests should be conclusive by the end of September.

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18. Modification Work Orders - MWO #62 which concerns low level keying the M-28 ASR for RF suppression has been corrected and revised.

19. New Teletype Equipment - One of the two new M-28 TD Reperforator sets previously received by this section for evaluation has been assembled. Testing and suggestions for changes are presently being completed.

RECORDS & DRAFTING SECTION

Reproduction:

	TYPE	MASTERS	COPIES
	Ozalid	514	804
	Ditto	24	2,339
	Xerox	---	8,241
25X1A2D1	<input type="text"/>	127	174

25X1A2D1 Drafting: A total of 136 drawings were handled, of which 53 were for One draftsman worked exclusively on the Satellite program preparing charts, maps, graphs, etc., for Mr. .

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INACTIVE PROJECTS

E-5037 Technical Bulletins
E-5167 Cipher Tape Destroyer
E-5209 Mobile Rehabilitation Program
E-5215 Review of Mobile & Base Surveillance Equipment



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Attachments:

1. TDY Report
2. Memo - Conversation with OTR
3. Memo - Repair of Collins 208-U Amplifiers
4. Numbered Projects

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